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March 5, 2008

Via U.S. Mail

Chip Humphrey, Superfund Project Manager
Eric Blischke, Portland Harbor
United States Environmental Protection Agency
805 SW Broadway, Suite 500
Portland, OR 97205

**Re: Comments on the Lower Willamette Group's Comprehensive
Round 2 Site Characterization Summary and Data Gaps Analysis
Report, Portland Harbor Superfund Site**

Dear Mr. Humphrey and Mr. Blischke:

On behalf of Schnitzer Steel Industries, Inc. and Schnitzer Investment Corp. (collectively, "Schnitzer"), I write to comment on the Round 2 Site Characterization and Data Gaps Analysis Report ("Round 2 Report") prepared by the Lower Willamette Group ("LWG") for the Portland Harbor Superfund ("Site"). As a member of the Portland Harbor business community, Schnitzer has grave concerns with the Round 2 Report and the course of the Remedial Investigation and Feasibility Study ("RI/FS") for the Site, as discussed below.

The Round 2 Report presents an interim evaluation of the data collected and compiled by the LWG through Round 2 of the RI/FS. As stated in the Statement of Work ("SOW") to the LWG's Administrative Order on Consent ("AOC"), the objectives of the RI/FS are to:

- 1) investigate the nature and extent of contamination for the in-water portion of the Site;
- 2) assess potential risk to human health and the environment;
- 3) develop and evaluate potential remedial alternatives to reduce risks to acceptable levels; and
- 4) recommend a preferred alternative for cleanup.

After several years of data collection and more than \$50 million expended, the RI/FS is still incomplete. Since inception of the RI/FS project, significant funds have been spent collecting data without any coherent plan. Time and effort also has been wasted pursuing certain technical assessments that provide no real benefit in defining remedial goals. Despite the mass of data and numerous research projects to date, the Round 2 Report still fails to provide clear guidance on an appropriate path toward the final remedy. Nonetheless, additional data collection is advancing under Rounds 3a and 3b, even before EPA has completed its evaluation of the Round 2 data, findings and conclusions.

The failures of the RI/FS for the Site can be traced, at least in part, to a breakdown in the planning process. Under EPA's own data quality objectives ("DQO") planning process guidance, clear objectives for each phase of the investigative process must be identified based on a defensible assessment of existing data. The process is intended to be iterative, with additional data collection determined following an evaluation of the data from the

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prior rounds. The RI/FS for the Site has not followed the DQO planning process guidance. Rather, it appears that EPA and perhaps the LWG have sought to anticipate additional data needs even before assessing data compiled in the prior rounds. As a result of these violations of the DQO planning process, substantial time and money has been wasted in generating unnecessary and duplicative data, while key data needs and fundamental technical questions have been ignored or deferred, as discussed below.

In the absence of a coherent process for data collection and assessment, the RI/FS has spun out of control. The Round 2 Report reflects these fundamental flaws. Set forth below is an overview of certain deficiencies in the Round 2 Report. These comments are intended to convey Schnitzer's serious concerns with the course of the RI/FS as reflected in the Round 2 Report and other documents rather than to dispute any specific factual assertions directed at Schnitzer or any other party. Schnitzer therefore reserves the right to challenge any such factual assertions as necessary in the future.

Below are our comments regarding: (A) the failure to follow the DQO planning process in the Round 2 Report and RI/FS process generally; (B) technical deficiencies in the Round 2 Report; (C) key data gaps and fundamental questions that remain unaddressed; and (D) the continued lack of direction in defining RI/FS goals.

A. THE RI/FS AS DESCRIBED IN THE ROUND 2 REPORT HAS NOT FOLLOWED EPA'S DQO PLANNING PROCESS

Under EPA's DQO planning process guidance, clear objectives for each phase of the investigative process must be identified based on a defensible assessment of existing data. EPA's "Guidance on Systematic Planning Using the Data Quality Objectives Process" describes the DQO planning process as a tool for developing data quality objectives (or performance or acceptance criteria), which determine "the type, quantity, and quality of data needed to reach defensible decisions or make credible estimates." This process includes seven iterative steps:

Step 1—State the Problem. This step includes defining the problem that necessitates the study; identifying the planning team; examining the budget; and scheduling. One of the key activities in this step is to develop a conceptual model of the problem. The guidance states "the conceptual model is an important tool for organizing information about the current state of knowledge and understanding of the problem, as well as for documenting key theoretical assumptions underlying an exposure assessment." With a complex project, it is acceptable to break the problem into smaller pieces and address these smaller pieces in separate studies.

Step 2—Identify the Goal of the Study. This step requires stating how environmental data will be used in meeting objectives and solving the problem, identifying study questions, and defining alternative outcomes or actions that can occur upon answering the questions.

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Step 3—Identify Information Inputs. This step includes identifying the types and sources of information needed to answer study questions.

Step 4—Define the Boundaries of the Study. For this step, it is necessary to define the target population and characteristics of interest, define spatial and temporal limits, and determine the scale of inference for decision making or estimation.

Step 5—Develop the Analytic Approach. This step identifies the population parameters most relevant for making inferences and conclusions on the target population and develops the logic for drawing conclusions from findings.

Step 6—Specify Performance or Acceptance Criteria. This step establishes quantitative criteria on the quality and quantity of the data to be collected, relative to the use of the data.

Step 7—Develop the Plan for Obtaining Data. This step develops a resource-effective sampling and analysis plan that meets the performance criteria specified in Step 6.

This DQO process can be repeated multiple times throughout the life of the project. One of the primary benefits of this process is that it "helps to focus studies by encouraging data users to clarify vague objectives and document clearly how scientific theory motivating this project is applicable to the intended use of the data." The process also is intended to lead "to efficient and effective expenditure of resources; consensus on the type, quality, and quantity of data needed to meet the project goal; and the full documentation of actions taken during the development of the project."

Consistent with the DQO planning process guidance, EPA's 2001 AOC with the LWG and related SOW and Statement of Qualifications ("SOQ") each contemplated that the RI/FS process would be iterative, with each round of data collection determined by the results of prior rounds. Collectively, these documents were intended to "...outline a decision process that will be used to focus sampling programs to gather data that are needed for the decision process." As stated in the SOW, EPA directed the LWG to:

... use the data quality objectives (DQOs) planning process, and other relevant USEPA guidance in conducting the RI/FS, to develop sampling designs for information and data collection activities that support problem formulation and decision-making. Other than in the initial RI/FS work plan for the ISA and adjacent areas, Respondents will propose in all subsequent work plan revisions whether additional information and data are needed and, if so, the design of each information and data collection effort. Respondents may also propose a decision framework that can be applied to the information generated during each data collection effort. This decision framework may aid USEPA in determining whether additional data will be required.

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The LWG's Draft Round 1 Work Plan incorporated this DQO planning process, specifying that "the DQO process would be used to guide the development of data collection and evaluation approaches, including determining whether data gaps remain" and that the process would be iterative. In other words, the LWG would conduct the DQO process and determine if data gaps were present. If data gaps were identified, the LWG would perform field studies (i.e., Round 1) to fill in those data gaps. The data generated from the field studies would be evaluated and would feed into another round of the DQO process. If no data gaps were identified after this process, then the site characterization would be complete and the baseline risk assessment and RI report would be prepared. However, if data gaps were identified after the DQO process, then another round of field studies (i.e., Round 2) would be performed and the data evaluated. This process would continue until it was determined through the DQO process that the study objectives had been met and no further data collection was required. In this work plan, it was anticipated that there would be the need for at least Round 2 of sampling after evaluation of the Round 1 data.

However, the RI/FS began to de-rail almost immediately after the process began. While the LWG's 2002 Draft Round 1 Work Plan expressly incorporated the DQO planning process, the Work Plan was never finalized. Round 1 collection nonetheless proceeded without an approved work plan in violation of the DQO planning guidelines. Only after Round 1 collection was complete was the Draft Round 1 Work Plan finalized as part of the 2004 Programmatic Work Plan ("PWP").

Procedural violations mounted during 2004. The purpose of the PWP was to provide a "comprehensive description of the work to be performed" for the RI/FS. As with the Round 1 Work Plan, the PWP discussed the use of the iterative DQO process to identify data needs, field studies, and data evaluation. Nonetheless, the PWP violated these very procedural guidelines. At that time, the Round 1 data still had not yet been evaluated in a site characterization summary report or an ecological preliminary risk evaluation report. However, the PWP already defined various other Round 2 investigation tasks. In defining these tasks before evaluating the prior data, the PWP itself violated the DQO process guidelines.

The PWP nonetheless asserted that future work would comply with the process, stating:

... a similar data evaluation and DQO process will occur following the evaluation of data generated during Rounds 1 and 2. The DQOs will be updated and focused following the various Round 2 investigation efforts to incorporate new data. Prior to future sampling events, work plan addenda will be prepared, in which the DQO process will be revisited and the new data needs identified.

Nonetheless, violations of the DQO process continued in 2005 and 2006. During that period, EPA sent two letters to the LWG purporting to identify data gaps and guidance on data collection efforts for Round 3 tasks even while Round 2 sampling was still ongoing. These directives and the resulting work were premature under the DQO process. At that

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point, no comprehensive evaluation had been prepared to guide the identification of data gaps as required under the DQO process, nor had the historical data been fully synthesized with the Round 1 data to assess and update the study's goals or objectives.

To date, EPA has not commented on the Round 2 Report, nor has it completed its evaluation of the data, findings or conclusions presented. Nonetheless, in addition to its premature Round 3 directives issued in 2005 and 2006, EPA has since submitted another letter to the LWG in 2007 requesting additional data collection for Round 3. In fact, EPA already has recommended still more data collection for Round 3b, even before completing its assessment of Round 2. Round 3 data collection is therefore proceeding in violation of EPA's own guidance. Given the time and effort devoted to the massive undertaking of the Round 2 Report, the decision to proceed without the full benefit of the Round 2 Report's findings and conclusions constitutes pure waste.

The LWG has acknowledged that the process has deviated from DQO guidance and has objected to certain of the additional data needs identified by EPA for Round 3. In a 2006 letter to USEPA from the LWG responding to EPA's Round 3 data gaps and sampling letters, the LWG stated: "...we are unable in many instances to determine how the data need identified by USEPA in these comments are consistent with the Programmatic Work Plan or were derived consistent with the DQOs, nor can we identify compelling new information that justifies deviating from the SOW and Programmatic Work Plan."

While EPA or the LWG may have hoped to expedite the process by anticipating potential data gaps before fully assessing existing data, these violations of the DQO planning guidance have caused the very inefficiencies that the DQO planning guidance was intended to prevent. Significant funds were, and still are, being spent collecting data without clearly defined goals for the overall project. EPA and LWG have failed to achieve a consensus on the type, quality, and quantity of data to be collected. Without proper guidance as to the data needed to answer the project goals, many aspects of the RI/FS have devolved into simple research projects, bearing little if any relation to any actual remedial goals. Despite the voluminous data and at least \$50 million incurred, fundamental technical questions remain unanswered, as discussed below.

B. TECHNICAL DEFICIENCIES IN THE ROUND 2 REPORT

Given the defects in the RI/FS process leading up to the Round 2 Report, it is no surprise that the Round 2 Report suffers from technical deficiencies. As discussed below, these defects include: 1) an overemphasis of groundwater relative to other sources; 2) a scientifically meaningless loading, fate and transport analysis; 3) a flawed human health risk assessment; and 4) an unsupportable ecological risk assessment.

1. Groundwater is Over-Emphasized in the Round 2 Report Relative to Other Sources

Of the various potential sources of contaminants, groundwater has been found to contribute a relatively small volume of discharge to the river. Therefore, upland

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groundwater is not considered a significant pathway, either for loading or exposures. In particular, groundwater is not a significant source of hydrophobic initial chemicals of concern ("iCOCs") such as dioxins, DDx pesticides, and PCBs, which appear to be driving cleanup concerns.

It appears that EPA and the LWG have been aware of the limited potential contribution of groundwater for some time. Nonetheless, a substantial portion of the data collection efforts summarized in the Round 2 Report relate to groundwater. In fact, 117 TZW samples were collected from 0 to 30 cm and an additional 38 samples were collected from 90 to 150 cm before the sediment-water interface, well below any possible biological exposure. These samples were extremely expensive to collect relative to other sampling methods and media. The scale of the groundwater data collection effort was wholly unjustified. In fact, most of the groundwater samples were collected after it became clear that groundwater is not a primary source of contaminants. This fact could have been confirmed by a much more limited investigation had EPA and the LWG followed the proper process under the DQO planning guidance.

As a result, groundwater is markedly over-emphasized in the Round 2 Report relative to other sources such as stormwater. In fact, the groundwater data appears to be feeding into several exposure scenarios, including exposure of transients to groundwater seeps, and transition zone water ("TZW") exposure for the benthic community. This data also appears to feed into the loading estimates in Appendix D for the river. In the case of human exposure to groundwater, the potential for such exposure was identified at only one area (Outfall 22b). Oddly enough, the "exposure" at that location was assumed to result from infiltration of the Outfall 22b conveyance system. In the case of TZW exposure of the benthic community, in theory it is concluded that this potential could occur for several initial iCOCs at several sites. However, this assumption is dubious since it presumes that the benthic community is physically in contact with the porewater concentrations measured. In short, the Round 2 Report concludes that an exceedance of surface water screening for TZW constitutes harm to the benthic community without any evidence that the community is in contact with the TZW itself.

While groundwater is over-emphasized, other more significant sources are de-emphasized in the Round 2 Report. Groundwater contributions, even historically, are small in comparison to stormwater discharges and combined sewer overflow ("CSO") events. The City of Portland alone currently has 322 outfalls along both shores of the Willamette River. It appears that the total number of outfalls to the river is currently unknown, although the LWG is still investigating. Given the significance of stormwater as a likely source of iCOCs such as PCBs, it is inconceivable that no significant stormwater sampling was conducted by the end of Round 2. As a result of this breakdown in the RI/FS process and improper focus on minor potential sources, it was necessary for many of the assumptions used in the loading analyses for stormwater as discussed below to be derived from literature rather than actual Site data, further reducing the certainty and usefulness of the analyses while increasing the likelihood of error.

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2. The Loading, Fate and Transport Analysis in the Round 2 Report Is Scientifically Meaningless

Appendix D of the Round 2 Report provides loading, fate, and transport calculations and evaluations of external sources. These calculations and evaluations are then summarized in Section 7 of the Report's main text. The external sources evaluated include:

1) upstream surface water; 2) stormwater; 3) groundwater; 4) atmospheric deposition; 5) riverbank erosion; and 6) transition zone water.

The stated purpose of the Appendix D calculations and evaluations is to provide information to facilitate "...relative comparisons of terms..." (presumably, sources) in the conceptual model(s) presented in Section 11. Accordingly, the loading, fate, and transport analyses merely provide "backing information" on the potential contribution and level of uncertainty associated with each of these sources. The analyses conclude that major sources are upstream surface water and sediment load, as well as stormwater. Interestingly, these are the very sources that are not examined in depth in the Round 2 Report, but instead were deferred for later evaluation.

These loading, fate, and transport calculations and evaluations do not feed into the risk assessment process or otherwise connect meaningfully with anything else in the Round 2 Report. Accordingly, these analyses appear to serve no scientific purpose whatsoever. Rather, it appears more likely that this work was undertaken for some sort of allocation-related purpose, which is not an appropriate task for the Round 2 Report as defined in the SOW.

3. The Round 2 Report's Human Health Risk Assessment Incorporates Flawed Premises and Meaningless Data

a. Any Conclusions Drawn From Migratory Fish Tissue Samples Are Questionable at Best

The Human Health Risk Assessment ("HHRA") in the Round 2 Report incorporates sampling data from fish tissue collected from adult salmon, sturgeon and lamprey. In collecting and assessing these samples, the HHRA seems to assume that the presence or absence of contaminants in the tissue can correlate to exposures within the Site area. This assumption is flawed for each of these species.

Salmon is not resident to the area. Any adult salmon captured in the vicinity of the Site are in the process of migrating through the area to spawning grounds. During the period of migration, such salmonids feed infrequently. Accordingly, there likely is little, if any, meaningful exposure to any contaminants of potential concern ("COPCs") by these fish during the time they travel through the Site. Any chemical accumulation found in these fish would most likely have occurred in the ocean phase of their lifespan. Thus, remedial action(s) in the Site would likely not affect the adult salmonid chemical body burden.

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Like salmon, the Pacific lamprey is migratory. As an anadromous species, adult lampreys spend one year at sea before migrating into freshwater in the spring to spawn. Accordingly, any effort to determine the source of any body burden would be difficult if not impossible. Moreover, remedial action(s) in the Site would likely not affect the adult lamprey body burden.

The value of tissue data from white sturgeon is also questionable at best. White sturgeon have a large home range that extends far beyond the vicinity of the Site. Once again, any effort to determine the source of any body burden would be difficult, and it is unlikely that any remedial action(s) in the Site would affect any such body burden.

Accordingly, the use of tissue concentrations in assessing fish ingestion exposure is questionable. EPA itself previously acknowledged these issues in its Summer 2003 Portland Harbor Superfund Site Newsletter, in which it states: "...It is important to note that Spring Chinook salmon, white sturgeon and Pacific lamprey were not selected for sampling under Round 1 of the Superfund investigation because it is difficult to correlate contamination in the tissues of these migratory fish with sediment contamination from a specific place..."

While data from these three species provides little if any insight into any actual risk posed by the Site, these species nonetheless were weighted heavily in the HHRA. In fact, they were weighted to contribute 50.3 percent of the total fish diet for the Native American adult and child under the "multi-species fish diet." As a result, the findings and conclusions of the HHRA have been seriously undermined if not rendered wholly useless.

b. A Substantial Portion of Tissue Data Was Collected from Outside the Site and Cannot Necessarily be Correlated to Conditions Within the Site

In addition to relying heavily on data from inappropriate species, the HHRA also incorporates substantial data from outside the Site area. For example, the salmon tissue was taken from fish captured upstream at the Clackamas Fish Hatchery. The lamprey samples were taken from Willamette Falls, a full 15 miles upstream. At this time, there is no legitimate basis for identifying the portion, if any, of the chemical body load that may be attributable to any conditions at the Site.

c. The HHRA Included Data Collection that Appears Unrelated to any Real Human Health Risk

Tissue samples also were collected from shellfish such as freshwater clams. However, the clams found in Willamette are a physically small species—so small, that the LWG could not collect sufficient biomass to perform any analytical testing. Moreover, these samples were collected despite the fact that there is no evidence of any actual human ingestion of this diminutive species.

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d. The HHRA Fails to Address the Potentially Critical Distinction Between Native and Introduced Species

The "resident fish" that appear to be driving the risk inquiry include carp, bass, and catfish, which are now subject to a PCB consumption advisory. However, these fish are all non-native, warm-water species introduced for sport fishing purposes. As such, these fish have been identified as posing a threat to certain native fish communities. Bass, in particular, are known to prey on juvenile salmonids, and their presence in the Willamette River is regarded as detrimental to salmon populations. Neither the HHRA nor the Ecological Risk Assessment discussed below address this fact nor do they consider the implications of potential efforts to preserve a fish population that, in itself, is destructive to the native ecological balance.

e. Life History Information on Relevant Species is Insufficient

To date, insufficient information has been compiled regarding the life history of fish in the area of the Site to determine how concentrations of contaminants in sediments may relate to concentrations in fish tissue. As noted in the Round 2 Report: "...the greatest source of uncertainty in developing fish BSAF values was in the definition of the home ranges for the different species. The calculation of SWACs did not take into account the ecological exposure of the fish that may have habitat preferences that result in an exposure that is greater or less than exposure to the site wide SWAC concentration for a given chemical..."

f. Human Fish Consumption Rates are Unrealistic

In assessing potential risk, the HHRA incorporates assumptions for the rate of fish and shellfish tissue consumption that are extremely high under the highest exposure scenario (172 g/day for tribal; 142 g/day for non-tribal). These rates far exceed the current fish consumption advisory for Portland Harbor, which advises healthy adults to eat no more than one 8-ounce meal of resident fish per month. In fact, even fish sold via interstate commerce that meet U.S. Food and Drug Administration standards for tolerable levels of PCBS (5 parts per million (ppm)) could be found to pose an unacceptable risk if these rates were applied in that context. Under these consumption rates, significant portions of the entire Willamette Watershed, including locations upstream from the Site, would be deemed to pose an unacceptable risk for several chemicals of concern, including PCBs, dioxins/furans, and mercury.

If these unreasonably high consumption rates are not re-examined, they could be misused to drive cleanup standards that are unreasonable or even unattainable. Without a change in direction, substantial additional work and critical remedial funds could be misdirected toward the goal of reducing already negligible risks from the consumption of non-native fish that may already contain lower PCB concentrations than commercial fish found in a supermarket.

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g. As a Whole, the HHRA Is of Dubious Value

Given the flaws described above, the current HHRA cannot be used to derive cleanup levels. The Round 2 Report's authors acknowledge this limitation. In fact, the Report includes repeated caveats, noting that this risk assessment effort is a screening level risk assessment and not a baseline HHRA. The HHRA therefore cautions that the data and interpretations should not be mistaken for clean-up levels. The number of caveats throughout the document suggests that the authors are seriously concerned that EPA may, in fact, use the findings as cleanup numbers. If the findings cannot be used for cleanup levels (as appears to be the case), then the value of this expensive HHRA is questionable.

4. The Round 2 Report's Ecological Risk Assessment is Flawed

Many technical aspects of the Ecological Risk Assessment ("ERA") in the Round 2 Report appear misdirected -- a fact expressly acknowledged by the authors of the ERA. In fact, the authors themselves identify various flaws in the process, explaining that they were compelled to include various items upon instructions from EPA. The areas of disagreement between EPA and the authors of the ERA include the following points:

- The authors of the ERA disagree with EPA's instruction to include initial areas of potential concern ("IAOPCs") (see subpart 5 below).
- The authors of the ERA disagree with EPA's instruction to establish screening levels for TPH. The uncertainties associated with any correlation of the available TPH measures (diesel- and residual-range hydrocarbons) to toxicity have been well-documented and the subject of dialogue between the LWG and EPA. In particular, the existing TPH measures represent mixtures of hydrocarbons with an unknown, variable composition of constituents of variable toxicities and cannot be used reliably to establish screening levels.
- The authors of the ERA disagree with EPA's instruction to include adult sturgeon as a receptor, noting that the inclusion of the juvenile stage was protective of the adult stage.
- The authors of the ERA disagree with EPA's instruction to include TZW exposure pathway for fish (such as sculpin and lamprey ammocoetes). The authors' position in this regard appears to be justified. The LWG has already determined that the pathway is incomplete and the ecological relevance is low. Nonetheless, EPA apparently insisted in carrying this exposure forward, without a reasonable explanation as to how sculpin and lamprey could be exposed to deeper sediments.
- The authors of the ERA disagree with EPA's instruction regarding the dietary dose for fish consumption of prey versus diet concentration-based toxicity reference values ("TRVs"). EPA requested that the concentration-based TRV's be omitted. However, the authors stress that, given the limited

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availability of fish feeding rates and body weights in toxicology studies, there is a high uncertainty in using dietary dose TRVs. They therefore note that this issue should be revisited for the (eventual) baseline ERA. The EPA approach therefore uses an assumption about feeding rate and body weights in fish based on (presumably) literature values, which the authors of the ERA acknowledge is limited.

- The authors of the ERA disagree with EPA's instruction to use an Uncertainty Factor ("UF") of 50 to calculate a chronic screening value from an acute screening value since no chronic data were available per EPA's comments. Again, the authors' concern appears justified since there is a high uncertainty in the use of a UF of 50. The authors therefore recommend the use of a range of UFs for (eventual) baseline ERA (which is still to come).
- EPA also recommended the use of ecological sediment screening values ("SSLs") to evaluate exposure of wildlife receptors to metals where SSLs are available for birds (arsenic, cadmium, copper, and lead) or for mammals (antimony, copper, and lead). The authors of the ERA did not follow this recommendation since Eco SSLs are based on multiple exposure pathways, some of which are unreasonable. Instead, they relied on literature dietary-based toxicity study values because. It is unclear at this time how this dispute will be resolved.
- For mammalian toxicity of DDT, the authors of the ERA and EPA disagree regarding the proper approach. EPA has taken the position that extrapolation factors should be used, while the authors recommend the use of actual toxicity data and only use extrapolation factors where toxicological data is lacking. This issue is material since the approaches yield significantly different outcomes. If EPA's approach is used, mammalian toxicity could erroneously be found to pose a concern. If the authors' approach is used, mammalian toxicity would not be found to pose a concern.
- The authors of the ERA included divers as a human exposure scenario in the tables but did not address divers in the text pending discussions with EPA. In fact, this exposure scenario is non-standard and of dubious relevance.

Given the scope of ongoing technical disputes between EPA and the authors of ERA, the document leaves unresolved critical issues that could significantly impact the risk assessment conclusions.

5. The iAOPCs in the Round 2 Report are Improper and Flawed

The Round 2 Report includes maps depicting certain iAOPCs, which are drawn as polygons superimposed on the Site. However there are several problems with this effort to identify iAOPCs prior to the RI/FS.

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First, the inclusion of iAOPCs in the Round 2 Report does not match the work product description in the SOW at Section 7.8.1. The SOW work product description for this Report does not include any reference to iAOPCs, but instead refers to this data report deliverable as a "...preliminary site characterization RI/Data complication summary." The work as described in the SOW could have been accomplished without the use of iAOPCs. In fact, there was good reason not to include iAOPCs in the SOW since iAOPCs are not recommended for inclusion in data reports, as per EPA's "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA, Interim Final" (October 1988), Chapter 3.7.2, which is cited in the SOW. Instead, the development of iAOPCs falls under Task 7 of the SOW: Development and Screening of Remedial Alternatives, which should be an RI/FS task.

Second, the iAOPCs cannot be used for defining areas for future cleanup efforts. In fact, the Thiessen polygons used to derive the iAOPCs are entirely driven by data density. This approach results in strangely shaped areas that can be dramatically shrunk (or increased) merely by changing data density. The shape of the iAOPCs, therefore, has nothing to do with implementability or constructability concerns, nor do they offer any insight into the scope or nature of any future cleanup effort. In fact, many of the iAOPCs contain strange projections and angles that are obviously impractical.

In short, the iAOPCs serve no scientifically meaningful purpose. While the iAOPCs as shown in the Round 2 Report ostensibly could be construed as a mere tool for prioritizing future data collection, it appears more likely that they were included in the Round 2 Report in an effort to advance allocation goals, which is not a proper purpose or use of the Round 2 Report as described in the SOW.

C. DESPITE THE MASSIVE SCALE AND EXPENSE OF THE RI/FS EFFORT TO DATE, KEY DATA AND FUNDAMENTAL QUESTIONS HAVE BEEN IGNORED OR DEFERRED IN THE ROUND 2 REPORT

Despite the massive volume of data and numerous research studies performed to date, critical data is still missing and fundamental questions remain unanswered due to the breakdown in the DQO planning process for the RI/FS at the Site. These gaps include:

- **Insufficient Engineering-Related Data.** Engineering data, including geotechnical data relating to sediment strength, is glaringly insufficient. Based on grain size analyses, it appears that sediments vary in composition throughout the Site, and some may be more load-bearing than others. The absence of data will contribute to significant uncertainty regarding costs and feasibility. Section 12 of the Round 2 Report includes specific recommendations for geotechnical and physical testing within each iAOPC. Treatability studies, however, appear to be put off until the RD stage, and it appears that no dredge elutriate testing has been performed or proposed.
- **Hydrodynamic Modeling to Date Does not Calibrate.** Based on information presented in other LWG documents, numerical modeling to date

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showed disagreement between measured and modeled results. This significant problem is not discussed in the Round 2 Report, nor is there any meaningful discussion of hydrodynamic modeling results in general.

- **No Significant Stormwater Sampling until Round 3.** Given the likely contributions of stormwater of iCOCs, the need for source control, and uncertainty in exposure scenarios, stormwater data must be a critical component of the RI/FS. However, no meaningful stormwater data was collected through Round 2. Instead, this critical component inexplicably was deferred into Round 3. Furthermore, a complete inventory of public and private outfalls in Portland Harbor is not complete, nor has CSO information (volumes, frequency of discharges, etc.) been forthcoming.
- **Inadequate Information on Fish Life Histories and Residence.** As noted above, the greatest source of ecological risk uncertainty with regard to biological sediment accumulation factor calculations is the definition of "home ranges" for different species. While the process of collecting information on home ranges is not easy or inexpensive, substantial money has already been incurred in collecting and testing fish tissue without a commensurate understanding of the habitat preferences of the fish, how far they range, and thus where their exposures may originate.

D. THE ROUND 2 REPORT DOES NOT SUFFICIENTLY DEFINE THE DIRECTION OF THE RI/FS

Perhaps as a result of the breakdown in the DQO process at the Site, many fundamental questions as to the purpose and ultimate goal of the investigation remain unanswered.

For example, there still is no clear way forward for establishing cleanup levels for key contaminants. The Round 2 Report notes in the Executive Summary that PCBs pose the greatest human health risk and ecological risk, suggesting that the remediation ultimately may be driven by the cleanup level for PCBs derived from the risk assessments such as those summarized in the Round 2 Report. However, as noted above, the Round 2 Report's authors are emphatic in cautioning against the risk assessments to date being used for establishing cleanup levels. Yet, if the risk assessment process remains on track without addressing the significant defects referenced above, the ultimate cleanup levels for PCBs and other contaminants could be set at levels lower than area-wide background. This path would result in a tremendously costly cleanup of dubious human health or ecological benefit.

As noted above, another key question left unresolved by Round 2 Report is the contribution of stormwater and the potential for recontamination. While we understand that Round 3 is focusing on matters including stormwater, it is inconceivable that this critical issue was not examined in the initial stages of the investigation to help guide and target subsequent efforts. Any future efforts must examine the potential for

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recontamination and ensure that sufficient information is developed regarding potential stormwater source control options.

Another source for recontamination of the Portland Harbor is the water column entering the Harbor from upstream. EPA and the LWG appear to acknowledge this source as a major contributor to contaminants in the Harbor. They further recognize that contamination originating upstream in the Willamette River drainage system, by itself, may pose an unacceptable risk in the Portland Harbor based on risk assessment approaches to date. However, this critical fact has not been considered in the overall RI/FS planning. While the Round 2 Report devotes significant attention to other potential sources such as groundwater, which poses little actual threat to the Harbor, it does not focus on the much larger volume of contaminants entering the Harbor in the upstream water column and virtually ignores the potential for recontamination by upstream sources.

Finally, it appears that little thought has been given to the ultimate goals of the RI/FS project. If "hot spot" removal is a potential cleanup option, the investigation could be better tailored toward obtaining the information necessary to support an assessment of that option. If the ultimate goal is directed instead at reducing the levels of bioaccumulative compounds throughout the Site, that option too could be assessed through more precise definitions of the species to be protected (for example, native versus introduced species) and a more detailed inquiry into alternative methods to lower exposures of subsistence fisherman, such as source control. While the forthcoming Feasibility Study ("FS") will presumably examine these and other potential options, it remains unclear whether the unfocused and duplicative information developed in the investigation to date will support a defensible assessment of these potential options.

While it may not be possible to provide complete to answers these questions at this stage in the process, the investigative efforts should be targeted toward developing the information necessary to make those key decisions.

E. CONCLUSION

For the reasons discussed above, Schnitzer has serious concerns with the Round 2 Report and the direction of the RI/FS for the Site. Given the significance of the defects and other issues identified above, we strongly recommend that EPA and the LWG conduct a thorough review and evaluation of the data collected to date and attempt to reach consensus on a plan consistent with DQO planning guidance for addressing any remaining deficiencies, data gaps and unanswered questions regarding the RI/FS, including those identified above.

This plan should include specific actions as necessary to define the direction and goals of the RI/FS, including steps to gather information necessary to set appropriate and defensible cleanup levels, plans for identifying methods for preventing recontamination through stormwater and other sources, and other tasks directed toward gathering information necessary to support a legitimate RI/FS. While each of these issues presents

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complex and difficult questions, the RI/FS cannot continue to shy away from these challenges if the process is to be salvaged.

Sincerely yours,



James J. Dragna

cc: Elizabeth McKenna, U.S. Environmental Protection Agency